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Procedures and findings of three reading comprehension studies are reported. The first study compared cloze readability test scores for 130 pairs of students (grade 3 through college) with scores indicating the information gained from reading. Students gained little or no information when they could not answer more than 25 percent of the cloze test items, but when they could answer as many as 35 percent, they were able to gain approximately as much information as students with greater reading ability. The second study determined the reading achievement grade placement scores of students who could answer 35 percent of the items on cloze readability tests made from subject matter area materials used at various school levels. The mean grade level at which students could read 35 percent of the items was 7.6 for primary-grade materials, 8.6 for intermediate, 9.4 for junior high school, and 10.4 for high school. The third study tested 240 students' understanding of simple factual information signaled by structures commonly found in written language. Almost one-fourth of the children were unable to comprehend one-half of the easiest sets of structures tested, and only 58 percent could use between-sentence syntax to comprehend. Tables and references are included. (CM)

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The Effectiveness of Current Procedures for Teaching Reading Comprehension[1]

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Most educators agree that the ultimate purpose of teaching reading is to enable students to understand what they read, not just to permit them to call the words printed on a page. The logic supporting this position seems irrefutable. The child must gain much of his knowledge from reading written instructional materials. If he cannot comprehend those materials, he is likely to fail in school, drop out, and live his adult life marginally employable and on the margins of the culture. It has long been obvious that functionally illiterate people constitute a social and economic burden for society. However, it is now becoming evident that the tragedy of their personal failure and frustration probably has social consequences far deeper than their simple effects upon the economy. Thus, we can generally agree that schools should spare no effort in teaching children to comprehend written language.

But merely agreeing that we should teach a set of skills falls far short of actually accomplishing that objective. This paper will describe a series of studies which, when taken together, provide a fairly adequate evaluation of the effectiveness with which schools teach the reading comprehension skills. These studies provide a strong basis for the claims that (a) a vast number of students never sufficiently master the skill of reading comprehension to enable them to acquire the knowledge contained in their instructional materials, and (b) this fact is probably attributable to the ineffectiveness of instruction in reading comprehension.

Students' Ability to Comprehend their Instructional Materials

This section will report research which indicates that students, as a rule, do not read well enough to learn the knowledge contained in their textbooks. Specifically, it appears doubtful that most elementary and junior high school students can learn much, if anything, from their instructional materials. By the time the students reach high school, it appears that more of them can understand their instructional materials, but even this result may be misleading.

But before we can examine this study, it will be necessary to describe a different and more basic study. This more basic study showed that materials can be divided more or less sharply into two groups, those from which a child can gain little or no information and those from which he can gain a substantial amount of information. Whether or not the child is able to gain knowledge from a given text depends upon whether he has sufficient reading ability to attain a

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1. This paper was delivered at the Annual Convention of the National Council of Teachers of English in Milwaukee, Wisconsin, on November 30, 1968.

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criterion level of performance on a cloze readability test made from the text. The second study will then demonstrate that many children do not have sufficient comprehension ability to reach this criterion level on cloze readability tests made from the instructional materials they are required to study.

Information Gain as a Function of the Ease of a Text

The purpose of this first study was to determine how the difficulty of a text influences the amount of knowledge children learn as a consequence of studying that text. Coleman (1968) seems to have been the first person to investigate this problem. He found that students gain less information from texts which are very easy or very difficult than from texts at an intermediate level of difficulty. Unfortunately, he did not perform this study in a manner that would allow us to determine the exact degree of ease with which a student had to be able to read a passage in order for him to exhibit this maximum information gain. The study which we are about to describe was designed to remedy this fact by determining the level of performance a student must exhibit on a cloze readability test made from a passage of text in order to exhibit a maximum of information gain on that text. This description will be relatively brief since the study was reported in detail elsewhere (Bormuth, 1968).

Method of Study: This study involved four major steps. First, the students were formed into matched pairs using their scores on a cloze test constructed and used just for that purpose. Second, one member of each pair was given the cloze readability test made from a passage in order to determine the degree of ease with which that pair of students read the passage. Cloze readability tests are made by deleting every fifth word in the passage and replacing the deleted words with underlined blanks of a standard length. Students are instructed to write in each blank the word they think was deleted. A response is scored correct when it exactly matches the word deleted. (See Bormuth, 1968, for a detailed discussion of the cloze readability procedure.)

Third, the other member of each pair was used to determine how much information his pair gained as a result of studying the passage. This was done by making a multiple choice, comprehension test for the passage. This test was administered as a guessing test to the pair member before he had read the passage. About two weeks later this student was given the passage and told to study it. Immediately following this he was given the same multiple choice test. The amount of information he gained was obtained by subtracting his score on the first administration of the comprehension test from the score he made on the second administration. Fourth, the cloze readability score made by the one pair member was then plotted against the information gain score made by his mate, and a curve was fitted to these points. This procedure was repeated using a second passage but using the same students. However, the students' roles were reversed for the purpose of measuring ease and information gain.

A total of 130 different pairs of students were tested. They were drawn in roughly similar numbers from grades 3, 5, 7, 11, junior college, and graduate level. Because of absences, this number shrank to 129 pairs on one passage and 125 pairs on the other. No time limits were imposed during the testing.

Results: All scores were converted to percentage scores. The cloze difficulty scores were then correlated with the information gain scores. These correlations, .69 and .62, were quite high in view of the error necessarily introduced by the matching of pairs. In order to determine the shapes of the curves relating scores on the cloze readability tests to information gain scores, eighth degree polynomial curves were fit to the set of data from each passage. Since these curves were extremely similar, the two sets of data were pooled and a single curve fit to the entire set. The curve that resulted is shown in Figure 1.

The important feature to note in Figure 1 is that students gained little or no information when their reading ability was so low that they were unable to answer more than about 25 per cent of the items on the cloze readability tests. But when they had sufficient ability to answer as many as 35 per cent of the items, they were able to gain roughly as much information as students having a greater degree of reading ability.

This result provides us with an important tool for evaluating the effectiveness of instruction in reading comprehension. Probably the best criterion for evaluating the effectiveness of comprehension instruction is obtained by determining if the instruction has prepared the students well enough so that they can perform the comprehension tasks which they are required to perform. That is, can students gain the information contained in their instructional materials? If a student can obtain a score of at least 35 per cent on a cloze readability test made from one of his texts, we can say that he has sufficiently mastered comprehension skills to perform that task at a satisfactory level. But, if he fails to achieve this level on the cloze readability tests made from his instructional materials, we must conclude that his instruction in reading comprehension has not been adequate to prepare him to deal competently with the kinds of comprehension tasks he is required to perform.

Comprehension of Instructional Materials[2]

The purpose of the second study was to determine the level of reading achievement required in order to comprehend the instructional materials used at the various major levels in schools. Stated operationally the purpose of this study was to determine the reading achievement grade placement scores of students who were able to answer 35 per cent of the items on cloze readability tests made from materials used at various levels in schools.

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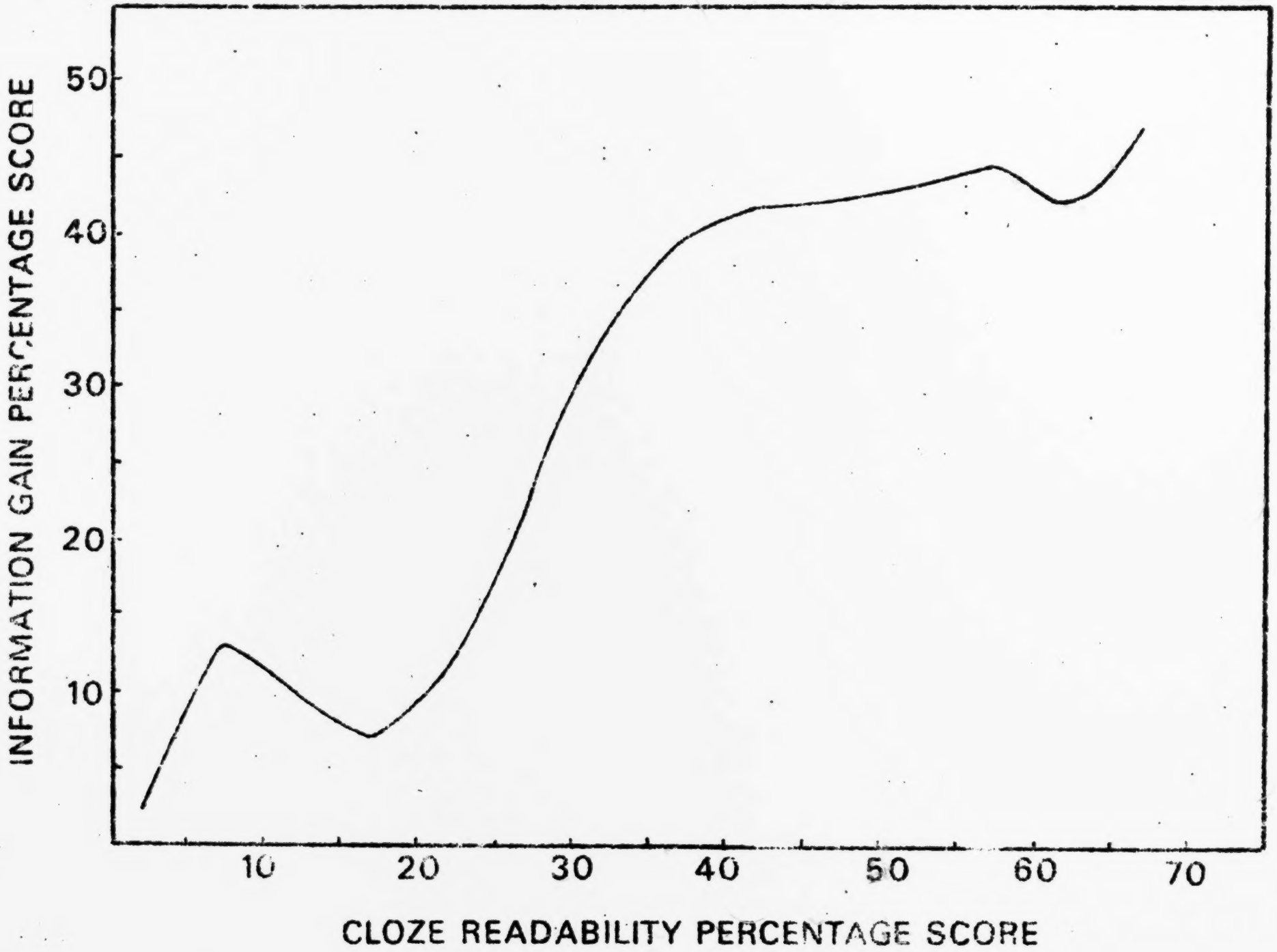
2. I would like to express my gratitude to Mrs. Barbara Dewey, who served as a Research Fellow on this project. She deserves much of the credit for the excellent quality of these data.

FIGURE 1

EIGHT DEGREE POLYNORMAL CURVE FITTED TO THE REGRESSION OF EACH PAIR'S INFORMATION GAIN SCORE ON ITS CLOZE READABILITY SCORE



Method of Study: In general outline, this study followed these steps: (a) A large number of passages were drawn from instructional materials used in schools. (b) A cloze readability test was made from each passage. (c) These tests were administered to students. (d) The California Achievement Test: Reading was administered to the same students to obtain their grade placement scores. (e) And, finally, a set of calculations were performed to determine for each passage the reading achievement, grade placement score of the average student who was able to answer 35 per cent of the cloze test items on that passage. This number can then be interpreted as the average amount of instruction a child must receive in order to acquire the information contained in that passage.

The passages, 280 in all, were drawn in equal numbers from the materials used in the primary, intermediate, junior high school, and high school grades. But before doing so, the curriculum was divided into ten subject matter areas and, when the passages were drawn, they were drawn in equal numbers, 28, from each area, with seven passages at each school level. Each passage was about 110 words in length and no two passages were written by the same author.

Five forms of a cloze readability test were made for each passage by deleting words 1, 6, 11, etc., to make the first form, words 2, 7, 12, etc., to make the second, and so on until all five of the forms possible had been made from the passage. This operation was necessary because a cloze test samples only a portion of the words in a passage and therefore the difficulty of a particular test form depends to some extent upon which words happened to be deleted. In tests as short as those used in this study, this could seriously bias the results unless this source of bias were eliminated by simply using all five cloze test forms.

Each cloze test form was given to roughly 57 students, with no student taking different forms of the same test. A population consisting of about 3,000 students was selected from schools in the suburbs of a large midwestern city. The students were enrolled in grades 4 through 12 with about equal numbers coming from the intermediate, junior high school, and high school levels. This population was divided into 50 groups matched on the basis of their achievement test scores and each group took, over a period of two weeks, tests over 28 of the passages.

The analysis of the data was accomplished in three steps. First, the scores of students taking different forms of the same test were pooled yielding 285 scores on each passage. Second, the students' scores on each passage separately were regressed on their reading achievement, grade placement scores using a third degree polynominal regression model. Third, the third degree polynomial regression equation was then used to calculate for each passage the reading achievement, grade placement score of the average student who was able to answer 35 per cent of the items on the cloze readability test made from that passage.

The grade placement number obtained for each passage was interpreted as the average amount of instruction students in the norm population of the California Achievement Test had to receive in order to obtain a score of 35 per cent on that passage. Since the norm population on the California Achievement Tests is broadly representative of children in the United States, this number can be taken as representative of the children in most schools in the United States.

Table 1

Mean Grade Placement Scores of Students Who were Able to Answer 35 Per Cent of the Items on Cloze Readability Tests Made from Instructional Materials

Subject Matter Category	Grade Levels at Which Materials are Used				
	Primary	Inter-mediate	Junior High School	High School	Row Means
Chemistry	7.6	9.2	9.5	10.6	9.2
Civics	7.6	9.0	9.3	9.9	8.9
Current News	7.1	8.5	9.8	10.5	9.0
Economics	7.5	9.0	10.3	10.2	9.2
Geography	7.7	8.6	8.9	10.8	9.0
History	8.2	8.7	8.9	10.0	9.0
Literature	7.7	8.9	10.0	10.9	9.4
Mathematics	7.1	8.6	9.8	10.9	9.1
Physics	7.7	7.3	8.8	10.0	8.5
Biology	7.8	8.5	8.5	9.9	8.7
Column Means	7.6	8.6	9.4	10.4	

A summary of these data appear in Table 1 which presents the mean grade placement score for the seven passages used at each school level in each subject matter category. This number represents the mean of the grade placement scores of students who were able to answer 35 per cent of the cloze test items on those passages.

An important fact stands out in these results. Chilcren normally do not achieve enough comprehension skill to read even the simplest instructional material until they have reached the sixth month of the seventh grade. Bear in mind that

the simplest materials were drawn from the materials used in grades 1 through 3. Since children in the primary grades almost never reach these levels of achievement, it seems doubtful that primary grade children learn anything from their materials. Lest it be thought that this result arose as an artifact of averaging many widely varying scores, it should be mentioned that even the easiest passage in the entire set required a grade equivalent of 5.6 in order to answer 35 per cent of the items on the cloze test made from it.

The picture improves only slightly at the intermediate level where an average grade equivalent of 8.6 is required in order to reach the cloze criterion score of 35 per cent. It is true that a few children in the intermediate grades manage to attain this level of reading ability. Even so, this group seldom constitutes as much as 10 per cent of the children in even a classroom of very able sixth grade students.

At the higher levels we see what, at first glance appears to be an improved situation. One-half of the ninth grade students can, by the middle of the year perform adequately on their instructional materials and by the middle of the tenth grade half of the students can gain the knowledge contained in half of the materials used at the high school level. But this situation is probably worse than it at first appears. These results may have come about because the poorer readers have by this time dropped out of school rather than because the schools are making vast strides in teaching children to comprehend what they read.

It is an ugly fact that the junior high school and early high school years function to drive out the less able students. It is during these years that children reach the upper limit of compulsory school attendance and it is during these same years that much of the incidence of school drop out occurs. Since the drop out rate is greatest among the less able students, we see that the better performance by junior high school and high school students is in some major proportion attributable to the fact that the poorer students are no longer present to pull down the averages on achievement test norms. Hence, we must conclude that most of the students of high school age probably have not developed sufficient reading skill to understand their instructional materials. It seems equally justified to conclude that just those students who developed sufficient comprehension skill to understand their instructional materials have been able to stay in school.

Because this study employed some rather unfamiliar testing procedures, and because its results are so gloomy, we are tempted to blame the outcome on the tests and forget the whole thing. We would justify this by arguing that, had the children been given a more familiar type of test, the children would have performed better. The next study preempts this argument by showing that children perform very poorly on the familiary type of comprehension questions testing the most basic type of comprehension skills on extremely simple tests.

Children's Comprehension of Simple Linguistic Structures

The purpose of this study was to determine how well children can understand the simple factual information signaled by the structures commonly found in written language (Bormuth, Manning, and Carr, 1969). Their comprehension of three classes of structures were examined -- syntactic structures appearing within sentences, anaphoric expressions, and syntactic relationships between sentences.

The within-sentence structures studied were modifications such as the noun plus relative clause combination of boy who was little in the sentence The boy who was little rode the horse. The most common way to test a student's comprehension of these structures is with wh- questions like Which boy rode the horse? A total of 25 different within-sentence structures were included in this study.

Anaphora are pronoun-like structures which refer back to or replace and usually abbreviate an antecedent structure. Pronouns are one class of anaphoric expressions but there are also several other types such as the word did in Bill came. Mary did, too. where did stands for the verb phrase of the preceeding sentence. Some types of anaphoric expressions may replace even an entire preceeding section of discourse, but this study included only the simplest types, those whose entire antecedent was located in the sentence immediately preceeding the one containing the anaphoric expression. Comprehension of anaphoric expressions is tested using questions like What did Mary do? which require the student to demonstrate his knowledge of the anaphoric expression by giving it in answer to a question derived from the sentence containing the anaphoric expression. In this study 11 types of anaphora were tested.

The relationship between sentences signals information not signaled by the sentences themselves. For example, the pair of sentences Joe fell off the horse. He broke his arm. states that Joe's falling off the horse caused the breaking of his arm. But when the order of the sentences is reversed, their relationship signals that the breaking of the arm caused Joe's falling from the horse. These relationships are tested using questions like What caused Joe to break his arm? There seems to be only about 15 different types of relationships between sentences. This study tested all 15 of those so far identified.

Method of Study: The comprehension of all three types of structures is commonly tested with just four question types -- rote, transform, semantic substitute, and compound questions. Since they have been rigorously defined elsewhere (Bormuth, 1968) only illustrative examples will be given here. Starting with the sentence The little boy rode the horse we can derive the rote question Which boy rode the horse? by deleting the phrase to be tested, replacing it with the appropriate wh- pro-element, and shifting the pro-element to the front of the sentence, unless it was already there. A transform question is derived by performing some sentence transformation such as the cleft on the rote question as in, for example, Which boy was it who rode the horse? A semantic substitute question is derived by replacing one or more of the phrases in the rote question with a synonym and thus obtaining questions like Which lad rode the horse? A compound question is made by simply performing both the semantic substitute and the transform operations to the same rote question. All structures were tested using all four question types.

The test materials were made in this way. Sentences were written to provide two examples of each structure. A four or five sentence paragraph was then written to incorporate each example. No sentence contained more than one embedding and none contained a sentence transformation such as the cleft or passive, so the syntactic complexity of the sentences was kept at a minimum. All words used in the paragraphs were selected from the Dale List of 3000 Easy Words, keeping the vocabulary difficulty at a minimum, also.

Each paragraph was printed on a separate sheet of paper and the appropriate question was printed directly below the paragraph. No student answered more than one of the question types pertaining to a paragraph. Roughly 240 students were tested with these materials, about 60 responding to each question. These students were all in grade 4 and they were drawn in about equal proportions from a rural school, a suburban school, and a Negro ghetto school in or near a large midwestern city. No time limits were imposed during the testing and the children were permitted to refer back to the paragraphs while answering the questions. The scoring procedure used was rigorous and explicit, but it would generally be considered generous in scoring responses correct (Carr, Pearson, Bceson, 1969).

Each question was scored to determine the percentage of students answering it correctly. An analysis of variance showed that the structures differed significantly in difficulty and that the difficulty rankings were reliable (r = .8). The difficulty of each structure was then determined by averaging the difficulties determined by the four question types and the two examples of each structure. The results are shown in Table 2.

Again, the children's performances were impressively low. Almost one fourth of the children were unable to demonstrate their comprehension of half of the easiest sets of structures tested, the within-sentence and the anaphora structures. Even the easiest structure tested attracted correct responses from only 80 per cent of the children. This amounts to saying that a very substantial proportion of our children are not able to demonstrate an understanding of the information signaled by the simplest and most basic features of the language.

It was equally alarming to discover that only about 50 per cent of the children could demonstrate that they understood the information signaled by the between-sentence syntax of the paragraphs. As children advance in school, an increasing amount of their instruction is presented in the form of lengthy discourse which is carefully organized. This organization is the between-sentence syntax tested here. That organization transmits a considerable portion of the information about the structure of the content the child is studying, a type of content educators value highly because it permits children to deal with the content on increasingly higher levels of abstraction. These data seem to show that much of this information is lost on most of the children, at least on those in fourth grade.

It is currently popular among linguists, and a few psychologists, to claim, without evidence, that nearly every child by age 5 has mastered the production of virtually every syntactic structure in the language. If the data from the present study are correct either the child, the linguist, or possibly both doesn't understand what he is talking about. A possible alternative is that the reading

Table 2

Percentage of Correct Responses on Questions Testing Students' Comprehension of Three Types of Linguistic Structures

Type of Structure	Mean	SD	Lowest	Highest
Within-Sentence	.73	.12	.28	.88
Anaphora	.77	.12	.54	.97
Between-Sentence	.58	.12	.33	.79

and testing tasks present difficulties, such as word recognition difficulties, which prevent the children from demonstrating that they can comprehend the structures tested. This explanation is somewhat doubtful in view of the fact that the materials contained very easy vocabulary and the children having severe word recognition problems constituted only about 5 per cent of the sample of children studied.

However, even if we were to grant the proposition that the poor performance of the children was due entirely to factors specific to the reading testing situation, the total picture would improve very little for the school treats an incorrect response the same regardless of whether it arose from a fundamental failure to understand language, a failure to understand just the written form of the language, or just a failure to understand and answer the questions. Operationally, a wrong response to a question is interpreted as a failure and the path from there is well known. Frequent failures lead to more failures and finally to school drop out which provides the child with a good head start on a career of bigger and more serious failure.

The School's Influence on the Child's Comprehension Skills

We must now ask what influence, if any, the school's comprehension instruction has upon the child's comprehension skills. This turns out to be a difficult question to answer. The studies just described show that vast numbers of children are unable to read well enough to acquire the knowledge contained in their textbooks and that a discouragingly small proportion is able to demonstrate a comprehension of even the most basic sentence structures by which language signals information. But this is not sufficient evidence with which to evaluate the claims that comprehension instruction either is or is not effective. It could be

that the instruction causes great improvement in the comprehension abilities of the children but that the task is so large and complex that it cannot be accomplished within the limits of the resources allocated to that branch of instruction.

Let us first dispose of the evidence which is, at once, the most obvious and the most useless. The studies in which norms were developed for the standardized tests of reading achievement can be regarded as experiments involving huge samples of American school children. The results of these studies show that children's scores on the reading comprehension tests exhibit a clear pattern of increases from one grade level to the next. But these results are far from definitive. We know that children's comprehension skills will show similar increases in the total absence of formal instruction, witness the remarkable growth made by children between the ages of two to five. For this reason, our problem here is to determine if the instruction produces any effect over and above that produced by the child's non-school environment.

Let us also dispel any hope that we might obtain direct evidence on this matter. In order to do so we would have to provide formal instruction for one group and withhold all instruction from a comparable control group. The control group could not be given any formal instruction unless, possibly, we were prepared to defend the unlikely proposition that instruction in comprehension is confined entirely to one segment of the instruction. Obviously, such an experiment is ethically unacceptable and operationally impractical, so we must rely on indirect evidence to decide this issue.

One line of reasoning appears to be especially helpful. We know that the home language environments of children differ considerably in the degree to which they prepare children to understand the language used in schools. Our chief evidence for this assertion is the commonly observed fact that there is a high correlation between the social, economic, and racial characteristics of the child's home environment and his score on the language achievement tests[3] we give him as he enters school. Second, the teacher is the most effective agent of instruction provided he is given both a clear idea of what it is he is supposed to teach and the materials with which to accomplish the task.

If these two propositions are accepted, then we would expect the differences in skill among teachers to produce large differences in children's comprehension abilities. That is, teachers who were energetic and resourceful in teaching reading comprehension would produce large effects on the children's skills while teachers with less energy and skill would produce a smaller effect on the children's performance. And the teacher's influence should tend to offset the influences of the home environment. But if the teacher is unclear about what he is to accomplish or is not supplied with effective materials, he can have little effect on the child, and the child's home background will be the dominant variable.

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3. The fact that these tests are often labeled as intelligence tests should not be allowed to mislead us. Large portions of these tests, in fact, measure nothing more than the degree of skill a child has attained in comprehending language.

Table 3

Variation Attributable to Individual Differences among Pupils, Classrooms, and Schools (Home Background), Expressed as Percentage of the Total Variation of the Scores on Each Test*

Test	Source of Variation		
	Pupils	Classrooms	Schools
1. Word Meaning	20.3	17.7	62.0
2. Paragraph Meaning	19.4	17.7	65.3
3. Spelling	34.9	12.9	52.2
4. Language Mechanics	19.0	50.1	30.9
5. Arithmetic Computation	17.8	60.0	14.2
6. Arithmetic Concepts	29.8	58.8	11.2
7. Arithmetic Applications	29.9	37.9	32.2

* Adapted from Table 2, page 359, in Wiley, D. E., and Bock, D. R. "Quasi-experimentation in Educational Settings: Comment." School Review, 75, 353-366, (1967).

Table 3 shows some results obtained in a study conducted by Wiley and Bock (1967). These data were gathered by administering a battery of achievement tests to all of the fifth grade children in all ten of the elementary schools in a single school district in northern Illinois. Since these schools were attended primarily by children who lived in small, relatively well defined neighborhoods, and since these neighborhoods differed considerably in socio economic characteristics, a major portion of the differences in the performances of children at the various schools can be attributed to differences in their home backgrounds. The numbers in the columns of this table show the percentages of the variation among students' scores which are attributable to differences just among pupils, differences just among teachers, and differences among schools or neighborhoods on each of the tests shown.

These data show that teachers have proportionately little effect upon their pupil's comprehension skills, the variation among teachers accounting for only 13 per cent of the total variation in comprehension and vocabulary scores. According to the line of reasoning being followed here, the teachers are able to have little effect upon the child's comprehension skills because they have neither a clear concept of what is to be taught nor materials designed to shape the comprehension skills efficiently. As a result, influences in the child's general language environment become the dominant factor in the development of his comprehension skills. This is shown by the fact that, on those same tests, 62 to 65 per cent of the variation was due to differences between schools. This is over three times the effect produced by the differences in instruction given by different teachers.

Quite the reverse was true on the arithmetic computation and concepts tests. In these subject matters the content is well defined and the materials are designed to produce the desired behaviors efficiently. Spelling scores present an extreme case where the materials and procedures are so thoroughly programmed that the instruction depends chiefly upon the pupil's own capabilities and upon his knowledge of his language. Arithmetic application scores exhibit a fairly large variation between schools principally because the solution of written problems depends in part upon the child's ability to comprehend the story problems.

These data do not rule out the possibility that even the weakest teacher produces a very large effect upon the child's comprehension skills and that, when this effect is compared to the effects produced by variations among teachers and the effects due to home environment, only the basic effects produced by the teachers are important. Thus, we must turn to the examination of the procedures themselves for some light on this matter.

The assertation that the content of instruction in reading comprehension is ill defined is easily verified. Textbooks on the teaching of reading usually carry a chapter or two on teaching comprehension skills. But these discussions are so vague as to be almost useless to a teacher. For example, they exhort the teacher to teach the children such skills as "comprehending the important facts, seeing the important relationships, grasping the main idea" and the like. But definitions of these skills never explain what a fact might be or how to decide which facts are important. Thus, if a teacher is faced with the sentence <u>The little boy mounted the horse.</u> he has no way to decide if the sentence contains numerous facts such as that the horse was mounted, that the boy mounted something, that the boy was little and so on. How the teacher would decide which were the important facts is left equally obscure.

And, aside from a few general admonitions to avoid focusing the child's attention on "mere" facts, the teacher is given little help in developing exercises which are appropriate for teaching the comprehension skills. The teacher is seldom shown examples of appropriate practice questions nor is he ever told how to construct them. The child's instructional materials provide the teacher with little, if any, help and the locally prepared curriculum guides are almost equally barren. What few exercises they contain appear generally unsystematic.

While this discussion is far from conclusive, it has provided a strong support for the proposition that the instruction in schools is relatively ineffective as an agent for increasing children's reading comprehension skills. Rather, a major portion of whatever gain the child exhibits in comprehension skills must be attributed to what he has acquired from his language environment.

Summary

For many years reading experts and educators in general have maintained that the ultimate objective of reading instruction was to enable the child to understand what he read and not just to enable him to call the words on the page. And they have argued that this is the objective upon which we should expend our major efforts, since it is only through the child's use of these skills that he is able to acquire much of the knowledge he will need throughout his life. On the whole, this argument seems well reasoned.

But when we examine how well this goal is being accomplished we find a rather discouraging situation. Children are not able to read their instructional materials well enough to gain much information from them until the children reach high school. Even in high school a large proportion of the materials remain essentially incomprehensible to a large proportion of the students. Furthermore, the apparently improved ability of the high school student may in fact have resulted merely because the less able students, the students who were unable to read well enough to learn the content of their instruction, have failed in school, dropped out, and are no longer present to pull down the average performance to its true level.

A more detailed analysis of children's comprehension skills showed that in the fourth grade a great many of the children were unable to exhibit comprehension of even the simplest structures by which language signals information.

However, this is not sufficient grounds upon which to indict the procedures used to teach reading comprehension. It could be that the task is so complex that the resources devoted to its accomplishment are simply too meager to accomplish the desired results. However, an analysis of the materials used to teach comprehension skills and of the curriculum guides and textbooks which instruct the teacher in how to teach those skills tends to suggest instead that there is no clear concept of what skills are to be taught. Furthermore, the teaching procedures are described in only the vaguest of terms, terms that hardly seem helpful to teachers.

There is no direct evidence on whether the procedures used to teach reading comprehension are in any way responsible for the increase in children's comprehension skills. What evidence there is suggests that whatever the magnitude of this effect it seems relatively small when compared to the effects exerted by child's general language environment.

In the final analysis, we cannot, at present, definitely reject our present procedures for teaching reading comprehension, but we must voice grave doubts about their efficacy. And we can definitely say that they do not produce sufficient results to enable children to profit from much of their reading.

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